

atlee

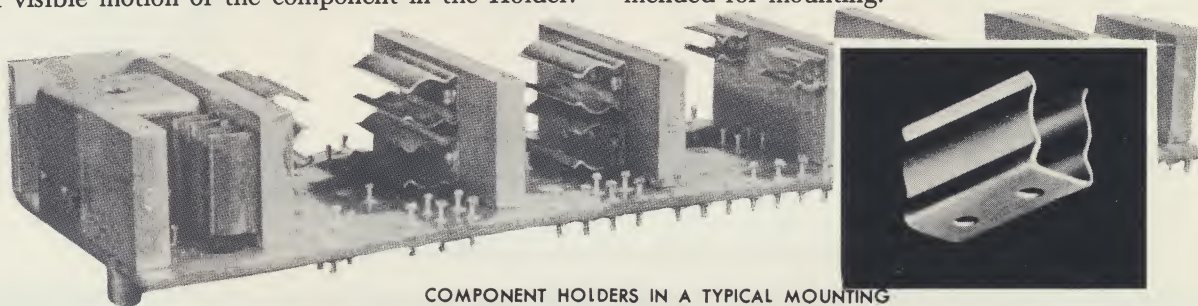
COMPONENT HOLDERS

FOR FIRM HOLDING OF CAPACITORS, RESISTORS, RELAYS,
WIRES, CABLES, TUBING AGAINST SHOCK AND VIBRATION

APPLICATIONS

Shock and vibration conditions: atlee component holders withstood vibrations up to 2000 cycles and 65 G's without resonant frequencies even after 100 insertions.

Completely dependable holding power: atlee holders withstand vibrations of 90 G's at 500 cycles for one minute and 1750 impact shocks of 200 G's, each perpendicular to the axis and along the axis of the Holder, all without visible motion of the component in the Holder.



COMPONENT HOLDERS IN A TYPICAL MOUNTING

FEATURES

Designed for maximum grip: atlee holders are designed structurally with a slightly concave base to derive maximum holding grip from the material put into the Holder. These holders provide their greatest holding power when mounted firmly in place.

Automatic increase in holding power: atlee holders have an automatic increase in holding power as their spring material tends to flex under heavy vibration and extreme temperature changes. The slightly elliptical shape of the holder cross-section rounds out thus bringing greater surface of the holder wall into contact with the component for maximum grip and temperature conductivity at the time most needed.

Commercial production: These spring-clip holding devices provide space saving, economical, and extremely convenient methods for holding electronic components. All the advantages of "hard mounting" techniques in electronics assembly are gained as well as new efficiency and time saved with the clip-in clip-out features of atlee holders.

Compact assembly design: The compact design of atlee holders facilitates a new neatness in electronics assembly and results in simplified and more reliable electronics packaging. Due to low clearance, riveting is recommended for mounting.

SPECIFICATIONS

Material: SAE #1065 annealed carbon steel formed in the annealed state per MIL-S-17919, or beryllium copper alloy #25 QQ-C-533.

Finish: Cadmium plated per QQ-P-416A Class II Type II, able to withstand minimum 50-hour salt spray.

Dimensions: Available in diameters of — .175, .195, .235, .260, .312, .375, .391, .400, .500, .562, .670, .750, .875, 1.000, 1.125, 1.250, 1.500, 3.00 inches.

For Fragile Components, slotted holders of lighter weight material are also available in the above dimensions.

Flat bases: atlee Holders are also available with non-concave bases.

"Our vast experience in the manufacture of a complete line of component holders is available to assist you in solving any holding problem."



atlee corporation

SALES OFFICE: 2 LOWELL AVE., WINCHESTER, MASS., PARKVIEW 9-5800.

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HUNTER 6-3932

APPLICATION DATA

on Component Holders

Maximum Grip: Maximum grip or retention force against shock is obtained using a component of the *nominal diameter* for which the holder is designed.

Minimum Diameters: In the table below we have listed the minimum diameter component that can be held. The retention force at this level is at a minimum. It is no more than sufficient to hold a component lightly in a static condition.

Fragile Components: Use the lighter weight material clips or those with slots. Slots add contact points to the component diameter and reduce longitudinal motion.

Vibration: Above $\frac{1}{2}$ " diameter clips have to be of increasingly heavier material to not develop resonant frequencies below 2000 cps.

Oversize Components: Components with diameters approaching the maximum diameters which a holder will take can be used in the standard (heavy) clips only if the component case is relatively strong. The alternate solutions depending upon whether you have to meet a 2000 cps frequency are: (1) Use a slotted or lighter weight clip; (2) Use the next size larger standard clip.

atlee nos. 100-200 100-300	Nominal Diameter	Minimum Diameter	Std. Clips Maximum Diameter	Lighter Wt. Clips Max. Dia.
-1	.175	.155	.185	.195
-2, -3	.195	.170	.215	.225
-4	.235	.210	.250	.260
-4A	.260	.235	.275	.300
-4B	.280	.255	.295	.310
-5	.312	.282	.332	.360
-5A	.343	.313	.363	.380
-6	.375	.340	.395	.400
-6A	.391	.361	.401	.400
-7, -8	.400	.370	.420	.450
-8A	.500	.460	.520	.562
-9, -10	.562	.522	.592	.670
-10A	.625	.585	.655	.710
-11	.670	.620	.700	.750
-12	.750	.695	.805	.875
-12A	.875	.815	.935	1.00
-13	1.00	.940	1.02	1.15
-14	.375	.340	4.00	—
-15	1.125	1.090	1.20	1.25
-16	.400	.370	.440	—
-17A	1.50	1.31	1.75	1.80
-18	1.25	1.170	1.375	1.40
-19	3.00	2.81	3.25	3.30

"TEST-PROVED" HOLDERS

for the Ultimate in Reliability

Material: Beryllium copper alloy strip per QQ-C-533, condition A.

Finish: Cadmium plate per QQ-P-416A, class II type II.

atlee nos. 100-350	Component Diameter	Holder Height	Holder Width	Holder Max. Length	Mtg. Holes No. x Diam. x Spacing
-1	.155/.185"	.25"	.20"	$\frac{5}{8}$ "	2 x .071" x .375"
-2	.170/.205	.27	.21	1	3 x .071 x .375
-4	.210/.250	.32	.26	$\frac{5}{8}$	2 x .071 x .375
-4A	.235/.275	.34	.28	1	3 x .071 x .375
-5	.282/.332	.38	.34	$\frac{3}{4}$	2 x .071 x .375
-6	.340/.395	.48	.41	$1\frac{1}{8}$	3 x .103 x .375
-6A	.361/.411	.48	.43	$1\frac{1}{4}$	3 x .103 x .375
-8	.370/.420	.48	.43	$1\frac{1}{8}$	3 x .103 x .375
-8A	.465/.520	.61	.55	$1\frac{1}{2}$	3 x .133 x .500
-10	.522/.592	.72	.62	$1\frac{5}{8}$	3 x .133 x .500
-11	.640/.700	.83	.73	$1\frac{3}{8}$	3 x .133 x .500
-12	.695/.805	.91	.81	2	3 x .133 x .750
-12A	.815/.935	1.09	.93	4	3 x .164 x 1.00
-13	.940/1.02	1.22	1.13	$1\frac{7}{8}$	3 x .164 x .500



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